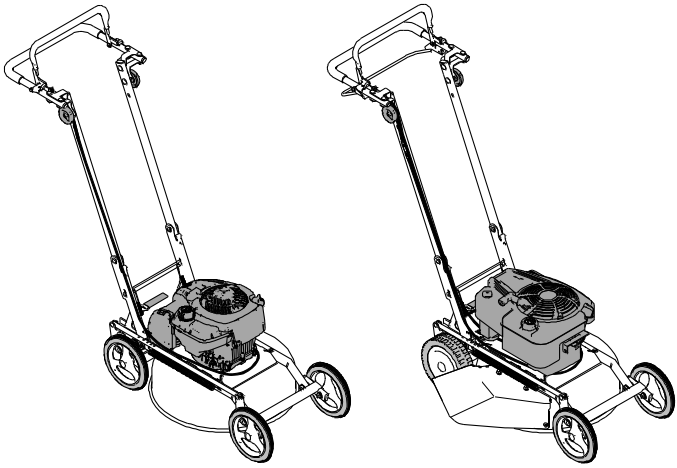
Operating Instructions



Mulching Mower

AS 420 4T, AS 420 4T A,
AS 470 4T, AS 470 4T A, AS 470 Universal 4T

From serial number: 420 4T: 025613030001, 420 4T A: 025713030001,
470 4T: 025413030001, 470 4T A: 025513030001,
470 Universal 4T: 026513090001

Issued: 10 February 2015, V5.0

EN-Translation of the Original Operating Instructions

Preface

Please fill in all data referring to your device. When ordering spare parts, provide your dealer with the device and engine number.

Serial number:

Pleases adhere the sticker from the warranty card here.

Engine number:

Date of purchase:

Address of dealer:

Dear customer:

Congratulations on your purchase. You have acquired a reliable quality product by “AS-Motor Germany”.

This product has been manufactured according to modern manufacturing methods and comprehensive quality assurance measures. Only when you are satisfied with your device, we have attained our goal.

Read these operating instructions carefully and attentively so that your device operates smoothly and you and others are safe from any hazards. If you have questions concerning your device, please contact your dealer or call our customer service (telephone +49/(0)7973/9123-0). For international AS partners, please see: www.as-motor.de/worldwide.

“AS-Motor Germany” wishes you much joy with your new device.

Intended use

The device is exclusively intended for mowing well maintained grassed lawn areas.

Only use attachments and cutting tools authorised by “AS-Motor Germany”.

Any use exceeding this purpose is inadmissible. The manufacturer is not responsible for any damage resulting from this. Observe the required maintenance and repair measures.

The user of the device is responsible for accidents or damage to other persons or their property!

The device **must not** be used:

– To cut hard objects, rocks, rubble, or pieces of wood.

– To trim bushes, hedges, and shrubbery.

– To cut plants in flower pots or planters or on rooftops.

– To clean (vacuum) footpaths.

– As shredder for shredding tree and hedge cuttings.

– As drive unit for work tools and any type of tool sets that are not authorised by “AS-Motor Germany”.

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Explanation of the symbols

Symbols in the instructions

In these operating instructions, the following symbols are used to denote special dangers.

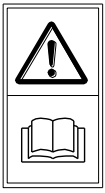
Warning.
These symbols denote special dangers.

Prohibition sign.
These symbols denote inadmissible procedures.

Directive sign.
These symbols denote required protective measures.

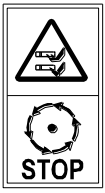
Symbols on the device

The following symbols are placed on the device to inform you must be careful and attentive when using the device:

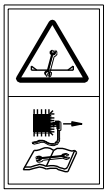


Working with the device requires extreme cautiousness.
Read the operating instructions before you use the device.

Risk of injury!
Make sure that no one is within the danger zone of the device.
Objects may be ejected.



The quickly rotating blade can cause life threatening injuries or immense property damage! Be especially careful to keep your hands and feet away from the blade when the device is put into operation.



Prior to any repair and maintenance work, pull off the spark plug connector.

Clean the ventilation grid!
The cooling air of the motor is sucked in through the ventilation grid of the engine cover. Always keep the entire surface open and free!

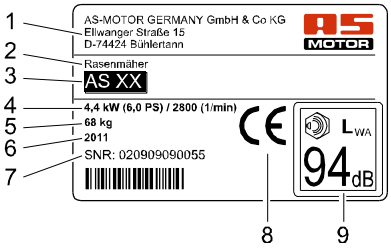
Noise is causing health problems. Use personal ear protection to avoid hearing damage.

Only for AS 470 Universal 4T

Operate the device only when impact protection or mulching accessory is fitted.

Type plate

The type plate on the device provides you with information on the device type and the technical data.



1 Name and address of the manufacturer
2 Device designation
3 Type designation
4 Rated power output in kW / engine speed
5 Weight
6 Year of manufacture
7 Serial number
8 CE marking
9 Sound level L_{WA}

Type overview

In this operating manual, the following device types are described.
Depending on their equipment, the corresponding descriptions of this operating manual apply.

	Drive	Impact protection
AS 420 4T	-	-
AS 420 4T A	X	-
AS 470 4T	-	-
AS 470 4T A	X	-
AS 470 Universal 4T	X	X

Safety instructions

Get informed!

For your safety, read these operating instructions with care. Familiarize yourself with the control elements and the proper use of the device. Share these operating instructions with other users of the device.

Before you use the device for the first time, let the dealer instruct you regarding safe use.

Get familiar with the device in a wide, open and flat terrain first.

User restrictions and hours of operation

Never allow children or persons who are not familiar with the operating instructions to use the device. Persons under 18 years of age may operate the device only under proper supervision. Local regulations determine the minimum age of the operator und the operating times.

Unsuitable for operation of the device are persons who

– are under the influence of alcohol, drugs or reaction retarding medicines.

– have physical and mental/emotional impairments.

– are tired or sick.

People fitted with pace makers are not allowed to touch any current carrying parts of the ignition system.

Safe handling of fuel

Danger!
Fuel is toxic and highly inflammable.

Danger of fire and explosion!

Keep the fuel away from ignition sources and do not smoke while handling the device.
Do not inhale fuel vapours; they are dangerous to your health.

Use gloves and avoid skin contact with the fuel.

Fuel up outdoors only when the engine is cool and not running. Use a filler or funnel.

Do not spill any fuel and do not let the fuel get into the canalisation or ground water.

If you spilled fuel, do not start the device until the fuel vapours have evaporated (wipe dry). Move the device away from the area where the fuel was spilled.

Always close the tank cap securely and do not open it while the engine is running or the device is still hot.

Drain the fuel tank only when outdoors. Use a suitable container or run the tank empty.

Keep the fuel away from children and store it in a suitable container in a dark, cool, and dry location.

Never park the device with fuel in the tank inside a building where fuel vapours could come in contact with open fire or sparks.

Immediately replace a damaged fuel tank or tank cap (authorised dealership).

First aid

When swallowing fuel or inhaling fuel vapours, do not force vomiting and immediately consult a doctor.

In case of skin contact, immediately wash with water and soap. Change your soiled clothing as soon as you can.

Measures in case of a fire

In case of a fire, use foam, dry powder extinguisher, or carbon dioxide (CO_2). Never douse with water!

Check the device prior to use

Prior to use, check the knife, drive and fastening parts for proper working condition and firm seating by visual inspection.

Never use the device with defective or missing covers.

Do not remove, change or override any safety devices or control elements.

Observe the maintenance instructions and replace damaged or worn parts immediately.

Have an authorised service centre check your device if the blade does not stop within 3 seconds.

Use caution during operation

Do not start the engine

– if fuel was spilled.

– in closed or poorly ventilated rooms (danger of poisoning!).

– if there are other persons nearby.

Only start the device when your feet are at a safe distance to the blade.

During startup of the engine, do not tilt the device.

Do not touch the engine or the silencer. They become very hot during operation and you can get burned. Resulting unintentional movements constitute an additional injury hazard.

Switch off the engine and wait until the blade comes to a standstill

– before you tilt or transport the device.

– if you step away from the device, even for just a short time.

– when you drive on surfaces other than grass.

– before you adjust the cutting height.

– before you refuel.

Switch off the engine and wait until the blade comes to a standstill, and pull off the spark plug connector

– before you clean or check the device or before you carry out work on the device.

– before you unblock or unclog the discharge area.

Prior to mowing

Personal protective measures

While mowing, always wear sturdy footwear with good grip, long trousers, and gloves. Do not mow in open sandals or bare feet.

Noise is causing health problems. Use personal ear protection to avoid hearing damage. Wear safety glasses and headgear.

Ask your specialised dealer about suitable protective equipment.

Preparing the mowing area

Prior to mowing, carefully check the perimeter of the lawn. Remove rocks, pieces of wood, bones, wires, and other objects that could be picked up and thrown out by the device.

Use caution when mowing

Risk of injury

Stay within shouting distance to other people who can help you in case of an emergency.

Danger!
Risk of injury caused by thrown out objects.

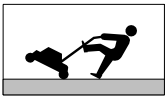
Never mow while persons, children, pets, or property are in the vicinity.

The area in front of and to the right of the device is especially dangerous.

Keep your hands and feet away from the rotating parts.

Only mow during daylight or with adequate artificial lighting. Never mow in the event of uncertain weather conditions and risk of lightning.

Be especially carefully when mowing on soft ground, nearby landfills, ditches and dikes.



Avoid mowing wet grass - slipping hazard!

Be extremely cautious when turning the device round or pulling it toward you and when moving in reverse.

Always walk slowly!

Never lift or carry the device when the engine is running.

When using the device over a longer period of time, vibrations can cause disturbances in the blood supply of the hands. A generally accepted usage time cannot be determined. Use gloves.

Take breaks on time.

Have an authorised service centre check the device immediately

– if the blade hit an object.

– if the device starts to vibrate unusually severely.

Caution when mowing slopes

Devices fitted with a four stroke engines may only be operated on less than 20° slopes. Otherwise, the four stroke engine can by damaged due to insufficient oil lubrication.

When mowing slopes, there is a risk of slipping and tilting!

– Only mow steep slopes when safe operation assured.

– Do not mow excessively steep slopes.

– When mowing steep slopes, meet the appropriate safety measures, e.g. use step irons.

– Always mow in horizontal directions, never up- or downwards.

– Sure footing is essential for your safety, always wear skid proof safety shoes.

– Be extremely careful when changing the direction.

– Only mow when the surface is dry and non-slip.

The device can roll away when you mow downhill. Put the device down on even surfaces only and prevent inadvertent rolling.

Mowing surfaces with fire hazard

– Carry a sufficient amount of suitable extinguishing agent.

– If side inclination is too great, fuel may leak from the carburetor or the tank. This poses a fire hazard!

– Observe the mowed surface also after moving is completed to ensure that no fire will start.

To avoid risk of fire, keep the following components free of dirt, grass, hay, leaking oil, grease, etc.:

– Engine

– Silencer (manifold, guard, clearances)

– Area around the fuel tank

When work is completed

After mowing, always close the fuel valve (if existing).

Prior to leaving the device, wait until the blade comes to a standstill and pull off the spark plug connector.

After switching it off, let the device cool down for at least 20 minutes before you store it in a dry, closed, sufficiently ventilated room.

Never store the device when there is fuel in the tank inside a building where fuel vapours might come into contact with open fire or sparks.

Use caution during maintenance and repair

Only carry out maintenance work as described in these operating instructions. Have an authorised service centre carry out all other work.

Only use the knives and spare parts authorized by “AS-Motor Germany”. Unauthorized knives and spare parts can cause severe injuries.

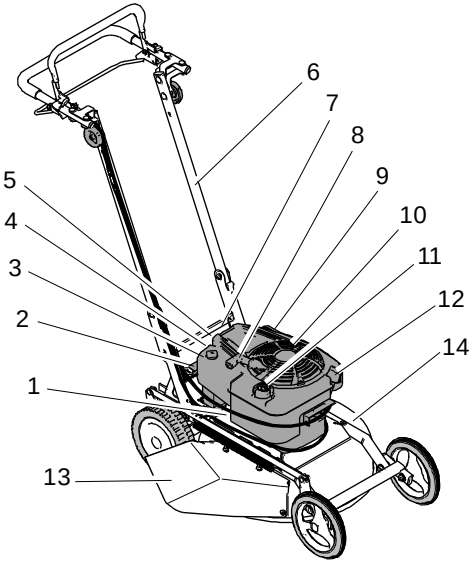
Prior to all maintenance work, wait until the engine comes to a standstill and pull off the spark plug connector.

We explicitly point out that, in accordance with the Product Liability Act, we are not liable for damages that were caused by our devices if

– worn or damaged parts were not repaired or replaced on time.
– these damages were caused by improper repair.
– when changing a part, our original parts or parts authorised by use were not used.
– the repair work was not carried out by an authorised service station.

The same applies for spare parts and accessories.

Device description



1 Fuel valve (if existing)

2 Cutting height adjustment (40 mm, 50 mm, 60 mm, 70 mm, 80 mm)

3 Air filter

4 Spark plug connector

5 Type plate

6 Guide bar with control elements

7 Bar release

8 Starter grip

9 Silencer

10 Ventilation grid

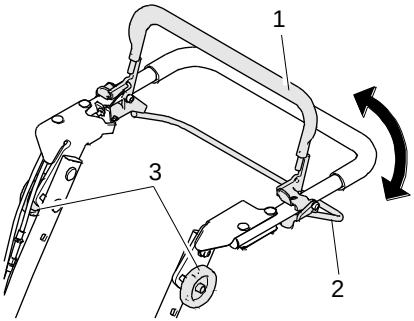
11 Tank filler spout

12 Oil filler opening

13 Impact protection (only for AS 470 Universal 4T)

14 Cover

Control elements

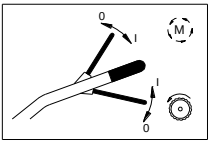


Engine brake lever (1)

The engine brake lever is a guard device. When you release the lever, the engine is shut off immediately, the knife comes to a standstill within3 seconds.

Operating position:
Press the engine brake bar towards the handlebar.

Switching off the engine:
Release the engine brake lever.



Top:
Engine brake bar
Bottom:
Drive bar

Drive bar (2 – only for devices with drive)

With the drive bar, you switch the drive on and off.

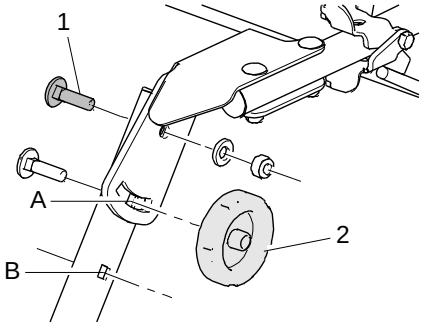
Drive on:
Pull the bar toward the handlebar

Drive off:
Release the bar

Height adjustment of handlebar

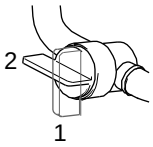
1. Release both knobs (3) at the handlebar.
2. Swivel the handlebar to the desired position and tighten both knobs again.

Mounting handlebar one position lower



1. Unscrew the knob (**2**) from the left and right guide bar.
2. Unscrew the screw (**1**) from the left and right guide bar.
3. Screw the screws (**1**) back down on position lower (**A**).
4. Screw the knobs (**2**) back in (do not tighten) one position lower (**B**).
5. Swivel the handlebar to the desired position and screw the knobs back down.

Fuel valve



1: Closed
2: Open

Assembly

Scope of delivery

The device is delivered in a carton.

The scope of delivery includes:

– The device.

– These operating instructions.

– Tool bag with small items.

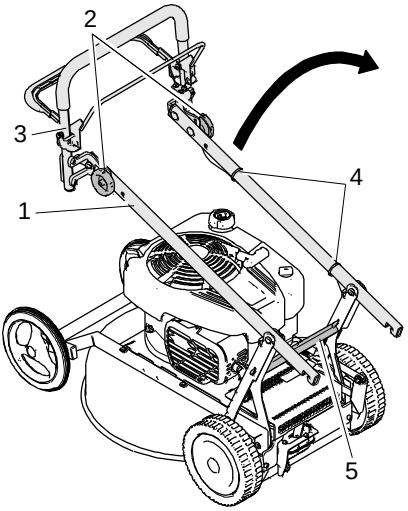
– Warranty card.

– Operating instructions of the engine manufacturer.

Unpacking

1. Remove the loose parts from the box.
2. Cut open the front side of the box.
3. Push the device out of the box

Mounting guide bar and handlebar

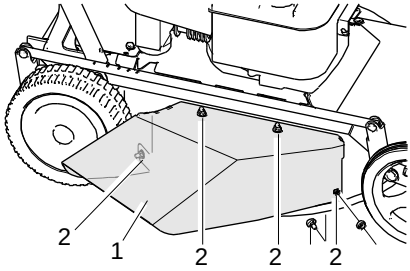


1. Fold the guide bar (**1**) until it engages.
2. Unscrew both knobs (**2**) all the way.
3. Swivel the handlebar (**3**) into the desired position.
4. Screw both knobs back in and tighten them.
5. Tighten the two cable ties (**4**) at the bar.

Folding the guide bar

1. Pull the bar release device (**5**) upwards.
2. Fold the guide bar forward.

Mounting impact protection AS 470 Universal 4T



1. Insert the attached 4 screws with square neck from the inside of the device housing into the holes (**2**).
2. Thread the impact protection (**1**) through and screw it down with 4 nuts.

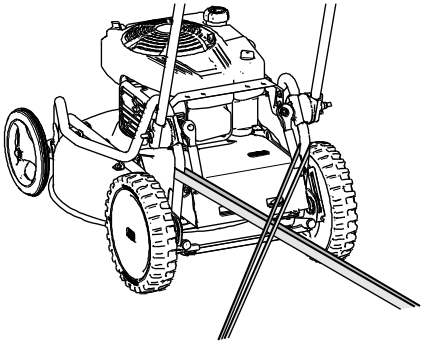
Transport

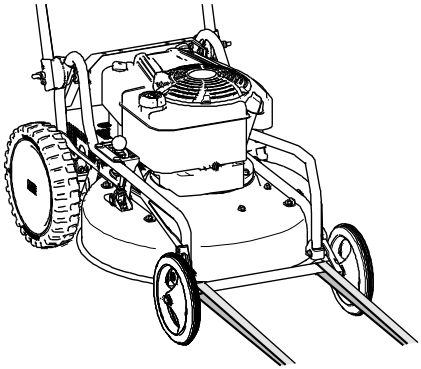
Switch off the engine and wait until the blade stands still before you lift the device. Two people shall lift the device.

Prior to transport, let the device cool down for at least 20 minutes. Close the fuel valve (if existing).

For transport, you can fold up the guide bar.

When transporting by vehicle, secure the device against rolling, sliding, tilting, and fuel and oil leakage.





Use tension belts to secure the device.

Beware: To avoid damage to the device, fasten the tension belts exclusively as shown in the illustration. Do not overtighten the tension belts.

Information on mowing

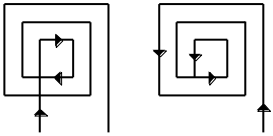
Prior to mowing, check your device for completeness, proper functioning, and cleanliness. A dirty ventilation grid causes overheating of the engine, this can damage the engine. A dirty protective grid at the silencer poses a fire hazard.

For your grass to grow beautiful and thick, mow frequently and keep the grass short. Do not mow your lawn too low in dry and hot conditions because the lawn is susceptible to sun and heat damage and will look unsightly!

Only mow with a sharp and undamaged blade so that the blades of grass do not fray. Have the blade sharpened and balanced regularly (authorised service centre).

Do not mow when the grass is wet or when it is raining. The turf may be damaged and there is a danger of slipping!

Turn the device around only in already mown sections. Do not leave the device unattended while the engine is running.



To evenly distribute grass remains and to achieve an even cutting height, we recommend, for flat terrain, to proceed according to the illustrated mowing pattern.

The mulch layer that results form mowing should not be thicker than 1-2 cm. Otherwise, during the decomposing process, a thick layer forms that negatively effects the important air-gas-exchange of the soil. In addition, the mower can clog.

If you mow once a week or every other week, we recommend a cutting height of 7-8 cm. If you desire a lawn that is lower, you need to mow more often. As a rule, you should not be cutting off more than 1/3 of the length of blade of grass.

If the grass is extremely high, mow twice at different cutting height settings.

Prior to starting

Fuel

As fuel, use unleaded petrol (see operating instructions of the engine manufacturer).

You can use E10 petrol. Do not store E10 petrol longer than 30 days.

Tanking up

Danger!
Fuel is ignited by hot engine parts.

Prior to filling up, switch off the engine and wait for at least 20 minutes until the engine has cooled down. Observe the safety instructions regarding the fuel!

Filling in the fuel:

1. For filling, use a canister with a filler spout or use as funnel.
2. Open the canister carefully so that the existing overpressure is discharged slowly and no fuel spurts out.
3. Open the tank cap carefully so that the existing overpressure is discharged slowly and no fuel spurts out.
4. Fill the fuel tank.
5. Screw the tank cap on tightly.

Checking the engine oil level

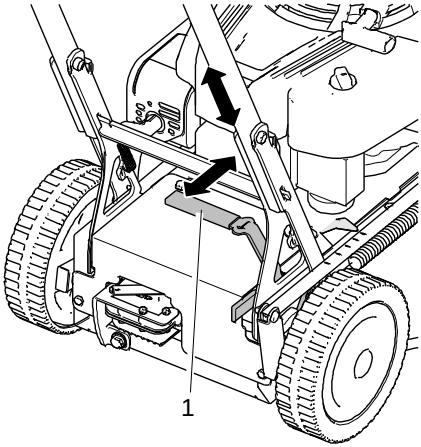
Attention! Prior to each use, check the engine oil level (see operating instructions of the engine manufacturer).

To ensure sufficient oil supply for the four stroke engine and to avoid resulting engine damage, the device may only be used on slopes up to 20°.

Adjusting cutting height

Adjust the cutting height setting only when the engine is switched off.

Set the cutting height so that the blade does not touch the ground even in case of terrain unevenness. If the cutting height is set too high, objects can be ejected and the “clean cut appearance” can be destroyed.



The cutting height can be adjusted in 5 positions from 4 cm to 8 cm.

1. Switch off the engine and wait until the blade has come to a standstill.
2. Push the central adjustment lever (**1**) backwards and push the device at the guide bar to the desired height.

Starting

Danger!
During startup, there is a risk of injury caused by the rotating blade.

Make sure that no one is within the danger zone of the blade. Do not tip the device over to one side during startup.

Danger!
If after startup the carburetor does not close properly, fuel will overflow and a fire hazard occurs.

Close the fuel valve (if existing) and contact an authorised service centre.

Starting the device

1. Put the device on even terrain, not in high grass.
2. Open the fuel valve (if existing).
3. Put on the spark plug connector.
4. Actuate and hold the engine brake lever.
5. Pull the starter point slowly out until you feel resistance then pull out quickly – engine starts to run.
6. Let the starter rope retract slowly.

Driving (devices with drive)

Danger!
Risk of injury caused by tripping or sliding while moving the mower backwards and turning it round.

Make sure that the area is clear of objects and watch for safe footing.

Driving

In case of a dangerous situation, switch off the blade by releasing the engine brake bar.

Drive on

1. Press the drive lever towards the handlebar – device is running.

Beware: If the drive is not completely engaged, the gearbox can overheat and be damaged. Always pull the drive lever all the way to the handelbar.
Check the settings of the drive regularly (see Maintenance).

Drive off

1. Release the drive bar.

Turning

Turn the device round only where the grass has been mowed already.

Turning round on an even surface:

1. Switch off the drive.
2. Turn the device to the desired side.
3. Switch the drive back on.

Turning round on a sloping area:

1. Keep the drive switched on.
2. Turn the device upslope.
3. Hold back the handlebar and the inner wheel.

The drive prevents sliding and supports the turn manoeuvre.

Driving (devices without drive)

Danger!
Risk of injury caused by tripping or sliding while pushing the mower, moving it backwards and turning it round.

Make sure that the area is clear of objects and watch for safe footing.

Turning

Turn the device round only where the grass has been mowed already.

Switching off and parking

Caution!
On a slope, the device can roll away.

Put the device on even ground only or secure it against rolling away.

1. Release the drive lever (devices with drive).
2. Release the engine brake bar.
3. Wait until the engine comes to a standstill before you step away from the device.
4. Close the fuel valve (if existing).
5. Pull off the plug connector.

Maintenance and cleaning

Regular maintenance keeps your device ready for use.

If you do not observe the maintenance notices, faults may occur that are not covered by the warranty. Operational safety is endangered as well.

Contact your authorised service centre for checkup if you detect problems during maintenance.

Component	Action	Maintenance interval	
		A	B
Device	Check for safe working condition (basic inspection).	■	▲
	Clean.	■	
	Customer service.		▲
Fuel	Check fuel level.	■	
	Is the tank cap closed?	■	
Tank,fuel valve, and fuel line	Check parts for leaks and check for good condition.	■	▲
Carburetor	Does the carburetor close again after starting?	■	▲
Ventilation grid	Clean.	■	▲
Engine cooling	Clean.		▲
Spark plug	Check/replace.		▲
Air filter	Maintain.	■	■▲
Blade and fastening components	Check for wear and damage. See chapter Checking the blade.	■	▲
	Change.		▲
Motor brake	Does the knife stop within 3 seconds?	□	▲
Drive bar	Does the device stop when the bar is in zero position?	□	▲
V-belt	Are the belts tensioned correctly, without fissures, and in good condition?		▲
Bowden cables	Check for proper function and ease of movement.	■	▲
Chassis and im-	Check for rust and fissures and check the welding seams.	■	▲

pact protection	Are all protective devices and covers in place, fastened correctly and properly functioning?	■	▲
Label	Condition of the labels.	■	▲
Engine	See operating instructions of the engine manufacturer.	■	▲
	Check oil level (see operating instructions of the engine manufacturer).	■	▲
	Oil change.		▲
Flammable material	Remove easily flammable debris buildup from the engine and the device.	■	▲
Tyres	Check tyres and, if necessary, the tyre pressure.	■	▲

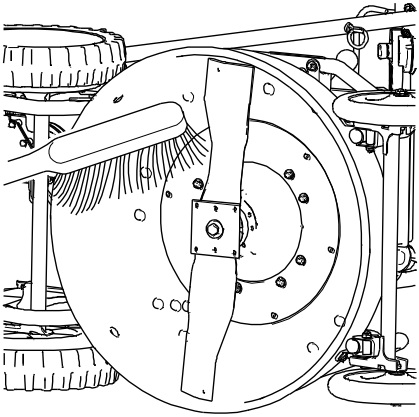
A Before and after each use.
B Annually or every 50 h.
■ By the user when the engine is not running.
□ By the user when the engine is running.
▲ By the authorised service centre.

Preparations

Prior to all maintenance and cleaning work:

1. Let the device cool down for at least 20 minutes.
2. Pull off the spark plug connector.
3. Close the fuel valve (if existing).
4. To work on the undeside of the device, tilt the device towards the silencer side.

Cleaning the device



Depending on use, clean the device thoroughly, especially the bottom and the knife.

Grass cuttings and dirt that are stuck interfere with the grass ejection and impair the cutting quality. To sufficiently cool the engine, keep the engine cover, ventilation grid and engine clean.

Fire hazard! Take particular care that the components at the silencer are clean.

For cleaning, use a hand brush. Remove stubborn dirt with a wooden or plastic spatula. Clean the outside housing parts with a cloth.

Do not clean the device with water spray or high-pressure cleaner! Do not use any aggressive cleaning agents.

General inspection

To ensure proper working order of the device, regularly check all nuts, bolts, screws, fuel line connections, air filters, etc. for firm seating. Check the ignition cable and the spark plug connectors for damages.

Immediately replace damaged or worn parts, especially covers, silencers or fuel tank (authorized service centre).

Check all parts that contain fluids for leaks and proper condition. These can be: Fuel tank, fuel valve, fuel lines, carburetor, engine, gears, battery, hydraulic system.

In case of leaks, contact an authorised service centre.

Maintaining the engine

Danger!
If the speed of rotation is set too high, objects can be ejected. The engine can be damaged and noise pollution increases.

Do not change the basic setting of the carburetor or the speed control.

The operating instructions of the engine are prepared by the engine manufacturer. They contain the maintenance instructions and the warranty conditions for the engine. If warranty work for the engine is required, please contact your authorised service centre or the nearest authorised engine dealer.

To ensure a long service life of the engine, sufficient engine cooling is required.

Keep the
- engine cover (ventilation grid),
- silencer (protective grid) and
- cooling fins of the engine

clean at all times.

Checking the engine oil level

Never allow the oil level to be too low otherwise the engine can be damaged. Never fill in too much oil. Otherwise, there is the risk that the oil enters and destroys the air filter.

For this, observe the attached operating instructions of the engine.

Checking the spark plugs

Danger!
The ignition system generates an electromagnetic field.

Wearers of pacemakers must not work on live parts.

Soiled spark plugs reduce the engine output. Clean the electrode of the spark plug with a brass wire brush. Check the electrode gap (see operating instructions of the engine manufacturer). Make sure that the insulator around the electrode is not damaged. Never use a damaged spark plug.

Tighten the spark plug using the correct torque (see operating instructions of the engine manufacturer).

Maintaining the air filter

Danger!
Cleaning agents pose a fire and explosion hazard.

Never clean the air filter with flammable solvents.

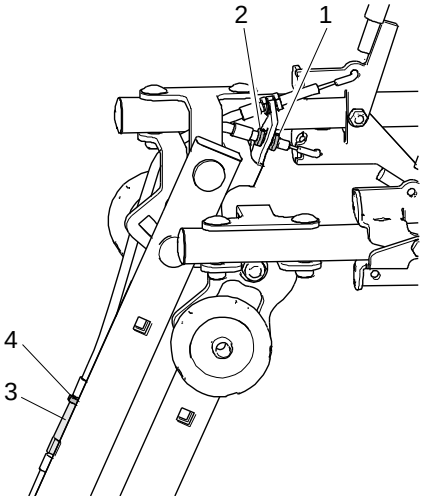
Make sure that the air filter is always clean. A dirty air filter reduces the engine performance and leads to increased engine wear and fuel consumption. Irrespective of the operating hours, change the filter insert at least once a year. Do not operate the engine without air filter.

For this, observe the attached operating instructions of the engine.

Checking the drive (devices with drive)

1. Put the device on a non-slip surface (e.g. concrete or asphalt).
2. Switch off the engine.
3. Actuate the drive.
4. Try to pull the device backwards.

If the rear wheels lock, the drive is correctly adjusted. If you can pull the device, the drive must be re-adjusted.



Readjusting the drive

You can readjust the drive at 2 points.

1. Turn the nut (**1**) towards the drive lever.
2. Lock the counternut (**2**) against the nut (**1**).

Or:

1. Turn the sleeve (**3**) at the drive away from the nut (**4**).
2. Lock the nut (**4**) against the sleeve.

Adjust the drive so that

– while the drive is actuated, the wheels will lock up when the device is pulled,

– while the drive is not actuated, the wheels turn feely.

If there is not any noticeable improvement after the adjustment, have an authorised service centre check the device.

Beware: If the drive is not adjusted correctly, the gearbox can overheat or be damaged.

Checking the blade

Danger!
Improperly mounted and maintained blades pose a severe injury hazard.

Work at the blade shall only be performed by an authorised service centre.

Wear sturdy gloves when you check the blades.

Work on the blade requires special qualifications because an unbalance test is required and the torques must be observed.

Check the blade and all fastening parts for wear, damage and cracks

– before and after each mowing operation.

– when there are significant changes.

All blade parts shown and their fastening parts must be changed

– when damage or cracks were found.

– At least once a year or every 50 operating hours, regardless of whether there is wear or not. Material wears out, gets cracks which can endanger persons or property.

Vibrations indicate that

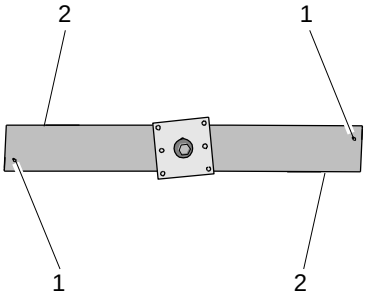
– the blade is worn excessively on one side or

– damage of motor or cutting unit mount (e.g. rubber elements).

Improperly sharpened blades increase the device load and result in fatigue cracks and breakage.

Ejected pieces can cause severe injuries.

Blade change



It is absolutely necessary to change the blade:

– When one of the wear markings (**1**) was reached. Original blade are engraved with wear markings (marking in form of a ball-shaped imprint on the rear side of the blade).

– When the thickness of the blade at the rear edge of the vane (**2**) or at another point is below 1 mm (exception: cutting edge).

Original blade

An original AS-blade is engraved with:

AS GXXXXXXXX or EXXXXX

This corresponds to the spare part number.

Checking engine brake

Check the function of the engine brake by switching off the engine. The blade must come to a standstill from full speed within less than 3 seconds. Contact an authorised service centre if this is not the case.

Storage

Storing the device

Keep the device in a closed, dry, and well ventilated room and out of reach of children. Always eliminate all problems of the device before you store it so that the device is always in a safe-to-operate state. Let the engine cool down before you store the device in closed rooms.

Longer storage

1. Observe the safety instructions regarding the handling of fuel.
2. Draining fuel tank:
   If fuel valve is existing: Put a piece of a tube on the fuel valve and fill the fuel in an adequate fuel container.
   If no fuel valve is existing: Contact an authorised service centre.
3. Emptying carburetor: Start the engine and let it run until it stops on its own.
4. Clean the device thoroughly.
5. Touch up defects in painting (for spray paint, see Accessories).
6. Perform corrosion protection on the engine:
   – Unscrew the spark plug.
   – Fill a tablespoon of engine oil into the spark plug opening.
   – Pull the starter rope slowly until you get resistance (oil distribution in the cylinder).
   – Re-insert the spark plug and screw in fully.
   – Do not fit the spark plug connector!

In autumn, have your device checked by an authorised service centre!

Restarting

If you want to start the device after a longer storage, carry out the tasks described in chapter Maintenance.

Spare parts

The reliable and safe operation of the device also depends on the quality of the spare parts used. Only use original spare parts and accessories that were approved by "AS-Motor Germany". When foreign parts are installed, the warranty and guarantee shall be void for the foreign part and for the device and for any resulting damage.

Inform your authorised service centre about the device type and serial number of your devices when you order spare parts.

Wear parts

Some parts are wear parts. They wear during use and must be replaced. The warranty does not cover the following parts:

Blades, cutting blades, cutter bars, blade bolts, sliding plates, V-belt, chains, Bowden cables, starter ropes, pressure plates, air filters, spark plugs, disc springs, lock washers, fuses, discs, thrust plates, pressure discs, protection skirts, impact protection, wheels, tires.

Disposal

Grass clippings must not be thrown into the waste but should be composted.

Shredded plant material decomposes quickly, can be utilized as fertilizer, and, therefore, be left on the ground.

Dispose of waste oil and fuel in accordance with the local regulations or return it to an oil shop.

Packaging, device, and accessories are made of recyclable materials and must be disposed of accordingly.

Warranty

The conditions of the warranty can be found on the reverse side of your warranty card. Send the filled-out warranty card immediately after the purchase of your device to "AS-Motor Germany" or the supplier. Otherwise, the warranty is no longer valid.

Preserve the proof of purchase or the warranty card that was filled out by the vendor.

Troubleshooting

The following table contains the most frequent problems and their elimination. If more problems occur, contact the closest authorised service centre.

You can find an authorised service centre on our home page www.as-motor.de.

Problem	Possible cause	Remedy
Engine does not start	Engine brake bar is not pressed.	Press the engine brake bar towards the handlebar.
	Fuel valve is closed.	Open fuel valve (if existing).
	No fuel is in the tank.	Refill fuel.
	Device was tilted – oil leaked into the air filter.	Replace air filter, unscrew spark plugs and start several times when the fuel valve is closed (if existing), dry the spark plugs and screw them back in.
	Engine was flooded due to too many start attempts.	Replace spark plugs, unscrew spark plugs and start several times when the fuel valve is closed (if existing), dry the spark plugs and screw them back in.
	Spark plug connector is pulled off.	Observe the safety instructions! Put spark plug connector back on.
	Air filter is dirty.	Maintain air filter (see also Maintenance and cleaning).
	Spark plugs are sooted, damaged, or incorrect electrode gap.	Clean spark plugs and check electrode gap (see also Maintenance and cleaning). Replace spark plugs if necessary.
	Housing of the mower is jammed.	See also Maintenance and cleaning.
	Poor quality, dirty, or old fuel.	Clean fuel system (authorised service centre). Always use fresh fuel.
	Blade is loose.	Authorised service centre.
Engine starts badly or runs irregularly	Air filter is dirty.	Maintain air filter (see also Maintenance and cleaning).
	Poor quality, dirty, or old fuel.	Always use fresh fuel.
	Spark plug is sooted, damaged, or incorrect electrode gap.	Clean spark plug and check electrode gap (see also Maintenance and cleaning). Replace spark plug if necessary.

	Housing of the mower is jammed.	See also Maintenance and cleaning.
No or insufficient drive when the drive bar is actuated.	Drive belt is insufficiently tensioned.	Authorised service centre
	Drive train is incorrectly adjusted.	Check the drive (see Maintenance and cleaning).
	Clutch is worn.	Check the drive (see Maintenance and cleaning).
The blade slides	Replace friction discs.	Authorised service centre.
Strong vibrations during operation	Unbalance at the blade caused by incorrect sharpening or chips on the blade.	Have blade resharpened and balanced by an authorised service centre. Replace a damaged blade immediately.
	Blade drive shaft is bent due to collisions with foreign objects.	Authorised service centre.
	Engine fastening is loose.	Authorised service centre.
	Blade fastening is loose.	Authorised service centre.
Irregular noises	Loose fastening elements.	Authorised service centre.
	Silencer is defective.	Authorised service centre.
Engine is smoking	Air filter is soiled or drenched with oil.	Maintain or replace air filter (see also Maintenance and cleaning).
	Oil level is too high.	Have authorised service centre lower the oil level to the marking.
Engine gets hot	Ventilation grid is dirty.	Clean ventilation grid.
	Oil level in the engine is too low.	Refill engine oil (see operating instructions of the engine manufacturer).
	Cooling fins of the engine are dirty.	Have cooling fins cleaned by authorised service centre.
Uneven cut, lawn becomes unsightly	Blade is dull or worn.	Have blade resharpened and balanced by an authorised service centre. Replace a damaged blade immediately.
	Speed is too high proportionately to the cutting height.	Reduce speed and/or select the correct cutting height.
	Housing of the mower is heavily contaminated.	Clean.

Housing is jammed	Mowed grass was too long or too damp. Blade is worn. Engine speed is too low despite full power.	Adjust cutting height and mowing speed to the mowing conditions. Authorised service centre. Authorised service centre.
The device does not stop	Drive belt does not declutch.	Authorised service centre.
The engine does not switch off	Switching off system is defective.	Close fuel valve (if existing. Authorised service centre.

Accessories

Spray paint 400 ml, colour orange:	G00011050	E04606
Operating hours counter	G06927008	E10740
Clinometer:	G06950027	E11835
Mulching accessories (AS 470 Universal 4T):	G47026003	E09163

Technical data AS 420

Type	AS 420 4T	AS 420 4T A
Range of application (temperature)	0 - 30 °C For temperatures below 5 °C, observe the engine manufacturer's information regarding the engine oil.	
Engine Type Manufacturer Type Cylinder capacity Performance	One cylinder four stroke engine Briggs & Stratton 575 Ex series 140 cm^3 2.2 kW (3.0 PS)	
Engine speed	3000 min^{-1}	3000 min^{-1}
Cutting device Type	Blade	
Cutting width	42 cm	42 cm
Cutting height adjustment	central 40 – 80 mm, in 5 levels (40 mm, 50 mm, 60 mm, 70 mm, 80 mm)	
Growth height	up to approx. 15 cm	
Starting device	Rope start	
Drive		Rear wheel drive 2.5 km/h
Maximum area coverage	-	1000 m^2/h
Measures and weights Transport sizes with packaging L/W/H	120/65/52 cm	
Max. tyre dimensions L/W/H Weight	127/46/100 27 kg	127/46/100 31 kg
Capacities Fuel tank	0.8 litres	
Engine oil	0.65 litres	

Type	AS 420 4T	AS 420 4T A
Vibration emission value	according to DIN EN ISO 5395	
Hand-arm-vibrations $a_{h,w}$ Measurement uncertainty U	<2,5 m/s^2 1.5 m/s^2	<2.5m/s^2 1.5 m/s^2
Sound level	according to DIN EN ISO 5395	
measured sound level L_{WA}	91.6 dB	91.6 dB
guaranteed sound level L_{WA}	93 dB	93 dB
sound level at working place L_{pA}	82.2 dB	82.2 dB

Technical data AS 470

Type	**AS 470 4T**	**AS 470 4T A**	**AS 470 Universal 4T**
Range of application (temperature)	0 - 30 °C For temperatures below 5 °C, observe the engine manufacturer's information regarding the engine oil.		
Engine Type Manufacturer	One cylinder four stroke engine Briggs & Stratton		
Type Cylinder capacity Performance	575 Ex series 140 cm^3 2.2 kW (3.0 PS)	800 E series 175 cm^3 3.0 kW (4.1 PS)	
Engine speed	3000 min^{-1}	2800 min^{-1}	2800 min^{-1}
Cutting device Type	Blade		
Cutting width	47 cm	47 cm	47 cm
Cutting height adjustment	central 40 – 80 mm, in 5 levels (40 mm, 50 mm, 60 mm, 70 mm, 80 mm)		
Growth height	up to approx. 15 cm		up to approx. 30 cm
Starting device	Rope start		
Drive		Rear wheel drive 2.5 km/h	Rear wheel drive 3.0 km/h
Maximum area coverage	-	1000 m^2/h	
Measures and weights Transport sizes with packaging L/W/H	120/65/52 cm		
Max. tyre dimensions L/W/H Weight	131/51/100 28 kg	131/51/100 34 kg	131/66/100 35 kg
Capacities Fuel tank	0.8 litres	1.2 litres	
Engine oil	0.65 litres		

Type	**AS 470 4T**	**AS 470 4T A**	**AS 470 Universal 4T**
Vibration emission value	according to DIN EN ISO 5395		
Hand-arm-vibrations $a_{h,w}$ Measurement uncertainty U	<2.5m/s^2 1.5 m/s^2		
Sound level	according to DIN EN ISO 5395		
measured sound level L_{WA}	92.3 dB	91.8 dB	92.8 dB
guaranteed sound level L_{WA}	93 dB	93 dB	94 dB
sound level at working place L_{pA}	79.6 dB	80.6 dB	81.3 dB

AS-Motor Germany GmbH & Co. KG
Ellwanger Straße 15
D-74424 Bühlertann
www.as-motor.de

Declaration of conformity

We declare that the lawnmowers

Type	AS 420 4T	AS 420 4T A
Cutting width	42 cm	42 cm
starting from serial no.	025613030001	025713030001

as brought into circulation by us conform to all relevant safety and health requirements of the EC directives listed.

- 2006/42/EC
- 2000/14/EC
- 2004/108/EC
- 97/68/EC

Function:
The devices are exclusively intended for the mowing of well maintained grasslands and lawns.

Applied standards: DIN EN ISO 5395

Applies to 2000/14/EC:
Applied conformity assessment procedures Annex VI

Type	AS 420 4T	AS 420 4T A
Measured sound level	91.6 dB	91.6 dB
Guaranteed sound power level	93 dB	93 dB

Party involved:
DPLF, D-64823 Groß-Umstadt, EC identification number 0363

Place where all technical records are filed:
AS-Motor Germany GmbH & Co. KG
Ellwanger Straße 15
D-74424 Bühlertann

Bühlertann, January 2015

Eberhard Lange
Managing director

By Proxy Frank Einsiedler
Head of development

AS-Motor Germany GmbH & Co. KG
Ellwanger Straße 15
D-74424 Bühlertann
www.as-motor.de

Declaration of conformity

We declare that the lawnmowers

Type	AS 470 4T	AS 470 4T A	AS 470 Universal 4T
Cutting width	47 cm	47 cm	47 cm
starting from serial no.	025413030001	025513030001	026513090001

as brought into circulation by us conform to all relevant safety and health requirements of the EC directives listed.

- 2006/42/EC
- 2000/14/EC
- 2004/108/EC
- 97/68/EC

Function:
The devices are exclusively intended for the mowing of well maintained grasslands and lawns.

Applied standards: DIN EN ISO 5395

Applies to 2000/14/EC:
Applied conformity assessment procedures Annex VI

Type	AS 470 4T	AS 470 4T A	AS 470 Universal 4T
Measured sound level	92.3 dB	91.8 dB	92.8 dB
Guaranteed sound power level	93 dB	93 dB	94 dB

Party involved:
DPLF, D-64823 Groß-Umstadt, EC identification number 0363

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Professional technology for gardens and landscapes

Allmäher®	Manoeuvrable meadow mower for extensive green area care. The Allmäher reliably shreds metre-high grass, undergrowth, and weeds.
Ride-on Allmäher®	Ease of use and high area coverage all combined in a compact ride-on mower. Low centre of gravity, optimum weight distribution, and broad wheel base provide you with the best performance on slopes and power reserves.
Rear discharge mower	Professional lawn mower with rear discharge. With wheel drive and infinite speed regulation for exceptional cutting and catching performance in any situation.
Rotary mower	The economic alternative to bar mower. Ideal for fodder production. The grass is not shredded and placed into a pile on the side.
Flail mower	The flail blades are supported movably and avoid rocks and other obstacles and chop the cuttings several times.
Side discharge mower	This solid allrounder has a side discharge, wheel drive, and a housing of 3 mm thick plastic-coated steel.
Mulching mower	Mulching saves both time and money. The mulch stays on the ground and practically disappears into the lawn so that no complex disposal is necessary.
WeedHex	Removes weeds carefully, quickly, and without the use of chemicals: on transport surfaces, walls, curbs, and between interlocking blocks.